

Center for Raman Technology

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Raman spectroscopy is a method for analyzing the chemical constituents of sample material by detecting the wave length of light emissions generated by molecular vibrations in the sample.

Background

This Center was established in 1996 to commercialize Raman technology for chemical monitoring in natural gas, metal processing, and medical applications. Recent advances in instrumentation have made Raman scattering attractive as a general purpose analytical technique for measuring chemicals in solid, liquid and gaseous samples.

Raman spectroscopy is the measurement of the wavelength and intensity of inelastically scattered light from molecules. The Raman scattered light occurs at wavelengths that are shifted from the incident light by the energies of molecular vibrations. Typical applications are in structure determination, multicomponent qualitative analysis, and quantitative analysis. The Center of Excellence for Raman Technology is a research center committed to finding new applications for Raman Spectroscopy. We are currently developing External Cavity Laser Diodes for use with these Raman systems. The focus of the Center is to develop and test new designs and methods for using Raman Spectroscopy in a wide variety of settings. Currently work is being done on applications into different gas monitoring systems.

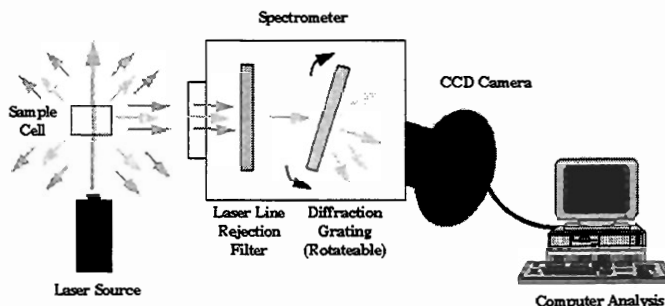
Technology Development Progress

The technology development effort is concentrated in the following areas: laser diode configuration, sample handling schemes, fiber coupling techniques, data-analysis algorithms and modifications to the core Raman detection systems.

Highlights and Accomplishments

The Center has submitted nine invention disclosures in the following areas: glucose monitoring, frequently diversity, external cavity laser diode, mucosal cell, neural network analysis, liquid enhancement cell, egg reflector cell, fiberoptic coupling and holographic feedback element.

The Center has developed effective collaborations with companies in steel, medical and energy industries, and has been successful in attracting several research and development contracts.



Raman Spectroscopy

Summary Data:

Current

1996-97 Award	\$125,000
Matching Funds	\$250,000
Patents Pending	0
Patents Issued	0
License Agreements	0
Spin-off Companies	0
Companies Assisted	8
Industry Jobs	0
Center Jobs	4

Cumulative

Awards	\$125,000
Matching Funds	\$250,000
Patents Issued	0
License Agreements	0
Spin-off Companies	0